

## ABSTRACT

A ballast circuit for supplying AC voltage and current to a gas discharge lamp, mounted in a troffer having a ground connection, upon the application of DC voltage and current. The circuit comprises: a transformer including a first and a second primary winding; first and second transistors, each having base, collector and emitter terminals, wherein the base terminal of each transistor is coupled to a drive terminal of the second primary winding; a constant current flow network coupled to the drive terminal so as to maintain the circuit in an oscillating mode; the first primary winding configured to be coupled across the lamp such that a capacitance at a first end of the lamp relative to the transformer is equal to a capacitance at a second end of the lamp relative to the transformer; and a current supply source coupled to the troffer ground connection. The circuit is configured such that a net current induced via the lamp and the current supply source into the troffer is substantially equal to zero. According to one embodiment, the capacitance at the first and second ends of the lamp is provided by a capacitor.